Federal Reserve Bank *of* Atlanta
Cost of Living Database

Technical Manual
Updated as of 12/22/2021

1. Overview of the Cost-of-Living Database

1.1 Purpose of the Cost-of-Living Database

The cost of living in the United States varies significantly across states and across counties within a state. Moreover, the amount of money needed to afford basic needs depends on family composition. In the Cost-of-Living Database (CLD), we provide cost-of-living estimates for food, housing, health insurance, childcare, transportation, and other basic expenses for every county in the United States for families with up to three adults and up to four children. The CLD considers the age of each family member when estimating costs. Ages of family members are crucial to consider when estimating costs. For example, in Atlanta, Georgia, childcare costs for an infant are estimated to be $42 a day, compared to $19 per day for a school-age child. Health insurance purchased in the private market can be much higher for older adults than for young adults or children.

The CLD can help determine the cost of living for different family types. It can be used in conjunction with the Policy Rules Database (PRD) to estimate the values of public assistance programs.

1.2 Expenses

The CLD includes the following costs: food, school meals prices, rent, utilities, health insurance (Medicaid, employer-sponsored insurance, or insurance purchased through the Health Insurance Marketplace), childcare, transportation, and miscellaneous (defined as all other essentials including clothing, shoes, paper products, diapers, nonprescription medicines, cleaning products, household items, personal hygiene items, and telephone service). The CLD uses a variety of sources to estimate each expense. Section 2 provides sources and detailed descriptions of each cost.

1.3 Relationship to the Policy Rules Database

Public assistance programs often subsidize a specific family's expense by providing certain products and services at reduced costs or for free. The PRD uses a combination of household-specific expenses and information from the CLD to estimate the full market cost of products and services.

If household-specific expenses data are unavailable to the researcher, the CLD can supply default values according to family attributes as well as county and state of residence. The CLD also can be used for applying the PRD to hypothetical situations. For example, it can be used to calculate effective marginal tax rates and model the size of the benefits cliff for someone who currently is on Medicaid but, with income gains, becomes ineligible and must purchase health insurance on the private market or obtain it through their employer. Finally, the CLD can help estimate expenses from the list of household-specific expenses required to use the PRD. (See the [Policy Rules Database Technical Manual](#) for more information.)

2. A Review of Included Costs

2.1 Food Costs

Overview

The CLD provides an annual estimate of food costs by age using the United States Department of Agriculture (USDA) Low-Cost Food Plan.[1] The CLD can be used with the algorithm in the calculations section to calculate the annual cost for the entire family.

Sources of Variation in Cost

The USDA Low-Cost Food Plan provides healthy meal plans at second and third quartiles of food spending and does not allow for dining out. This plan is used by bankruptcy courts to set alimony and child support payments. The CLD averages the low-cost food plans for a male and female of each published age category.

The CLD makes further adjustments for cost savings as a result of family size, as follows:
- One person: add 20 percent
- Two persons: add 10 percent
- Three persons: -add 5 percent
- Four persons: no adjustment
- Five or six persons: subtract 5 percent
- Seven or more persons: subtract 10 percent

At a geographic level, food costs differ for Alaska and Hawaii, but all other states have the same food costs. In Alaska, food costs are assumed to be 20% higher and in Hawaii food costs are assumed to be 80% higher. These adjustments are derived by comparing the low-cost food plan for a family of four in each state to all other states.

Using the Cost-of-Living Database: List of Inputs and Calculations

List of Inputs

The required family-level information for determining annual costs for the families modeled in the CLD are:

- Whether the family is located in Alaska or Hawaii or not **{AKorHI}**. {AKorHI}=AK if the family lives in AK, {AKorHI}=HI if the family lives in HI and 0 otherwise.
- Family size - **{famsize}**

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[1] https://www.fns.usda.gov/cnpp/usda-food-plans-cost-food-reports-monthly-reports

- The age of each member of the household - **{age_1}**, **{age_2}**, **{age_3}**, **{age_4}**, **{age_5}**, **{age_5}**, **{age_6}**, **{age_7}**, **{age_8}**
- Inflation rate - **{inflation rate}**

Calculations

Step 1: Assign expenses to the family.
Merging data from the CLD by {AKorHI}, {famsize}

Step 2 Calculate the *annual* costs for each person in the family, up to 8 people.

For persons i=1:8 {
*food_`i'*=[Age.1.year] if age_`i' ==1
*food_`i'*=[Age.2-3.years] if age_`i' in (2:3)
*food_`i'*=[Age.4-5.years] if age_`i' in (4:5)
*food_`i'*=[Age.6-8.years] if age_`i' ==(6:8)
*food_`i'*=[Age.9-11.years] if age_`i' ==(9:11)
*food_`i'*=[Age.12-13.years] if age_`i' ==(12:13)
*food_`i'*=[Age.14-18.year] if age_`i' ==(14:18)
*food_`i'*=[Age.19-50.year] if age_`i' ==(19:50)
*food_`i'*=[Age.51-70.year] if age_`i' ==(51:70)
}

Step 3: Calculate total expenses for the family.

expense.food= f*ood_1 + … + food_8*

Step 4: Adjust for inflation.

expense.food =expense.food * (1+ {inflation rate})^(Current Year-[yearofdata])

2.2 School Meal Costs

Overview

The CLD provides the daily cost of school meals for school-age children.

The CLD can be used with the algorithm in the calculations section to calculate the annual school meal costs for the entire family.

The CLD uses data on the average prices for paid meals during the 2016–2017 school year across elementary, middle, and high schools, inflating them to current-year dollars.[2]

Sources of Variation in Cost

The data used come from the School Nutrition Association (SNA) State of School Nutrition 2018 survey, which included responses from 1,550 SNA member school districts nationwide. The survey data provide breakdowns for elementary, middle, and high school separately, and for breakfast and lunch. The costs vary little (by only $0.30) across school types. Breakfast and lunch vary by at most $1.19. Because students typically have access to both breakfast and lunch, the CLD, takes the average cost of school lunch across all data provided.

Using the Cost-of-Living Database: List of Inputs and Calculations

List of Inputs

The required family-level information for determining annual costs for the families modeled in the CLD are:

- The age of each member of the household - **{age_1}**, **{age_2}**, **{age_3}**, **{age_4}**, **{age_5}**, **{age_5}**, **{age_6}**, **{age_7}**, **{age_8}**
- Determination of school age. CLD assumes children with access to free preK **{freePreKstate==1}** are considered school age if they are between 4 and 17. Otherwise **{freePreKstate==0}** children are considered school age if between 5 and 17.
- Inflation rate - **{inflation rate}**
- Number of school days - {**numberofSchooldays**}

Calculations

Step 1: Calculate number of school age children in the family.

1) Set pre-K start age.

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[2] See https://schoolnutrition.org/aboutschoolmeals/schoolmealtrendsstats/.

preKstartage=4 if freePreKState==1
preKstartage=5 if freePreKState==0

2) Determine the number of school-age children.

For persons i=1:8 {
*schoolage_`i'*=1 if age_`i' == (*preKstartage*,17)
}

numschoolagekids=
sum(schoolage1,schoolage2,schoolage3,schoolage4,schoolage5,schoolage6,schoolage7,schoolage8)

Step 2: Calculate the *annual* expense for the family by multiplying by the number of school-age children.

expense.schoolmeals = [expense.dailyschoolMeals]*{numberofSchoolDays}* *
numschoolagekids

Step 3: Adjust for inflation.

expense.schoolmeals=expense.schoolmeals*(1+ {inflation rate})^(Current Year-[yearofdata])

2.3 Housing Costs

2.3.1 Rent

Overview

The CLD provides monthly rent costs by county, number of adults, and number of children. The number of adults and the number of children determine the number of bedrooms needed.

The CLD can be used with the algorithm in the calculations section to calculate the annual cost of rent for the entire family.

As an estimate of typical rent, the CLD uses the most recent Fair Market Rents (FMRs) published by the U.S. Department of Housing and Urban Development (HUD).[3]

Sources of Variation in Cost

The FMR for an area is the amount that would be needed to pay the gross rent (rent plus utilities) of "privately owned, decent, and safe rental housing of a modest (non-luxury) nature with suitable amenities"; it is set at the 40th percentile of the distribution of gross rents. HUD calculates FMRs using the U.S. Census Bureau's 5-year American Community Survey data. The CLD calculates utility expenses separately, and therefore utilities are subtracted from HUD's FMR.

HUD calculates FMRs at the metropolitan-area level, which means that multiple counties can have the same estimated rent. FMRs and thus housing costs vary by family compositions. HUD also publishes Small Area Fair Market Rents (SAFMR) that can estimate variation at the ZIP code level, but the CLD does not use this data.

To assign the FMRs, the CLD uses the following rules: Adults and children must occupy separate rooms. A maximum of two adults can live in one room. A maximum of two children can live in one room.

Using the Cost-of-Living Database: List of Inputs and Calculations

List of Inputs

The required family-level information for determining annual costs for the families modeled in the CLD are:

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[3] https://www.huduser.gov/portal/datasets/fmr.html

- State identifiers: **{stateName}** - name of the state or **{stateFIPS}** - FIPS code of the state
- County identifier - **{countyortownName}**
- Number of adults - **{numadults}**
- Number of children - **{numkids}**
- Inflation rate - **{inflation rate}**

Calculations

Step 1: Assign *monthly* expenses to the family.
Merging data from the CLD by {stateName}, {countyortownName}, {numadults}, {numkids}

Step 2: Annualize expenses.

exp.rent=exp.rent*12

Step 3: Adjust for inflation.

exp.rent=exp.rent*(1+ {inflation rate})^(Current Year-[yearofdata])

2.3.2 Utilities

Overview

The CLD provides the annual cost of utilities (natural gas, electricity, fuel oil and other fuels, and water and other public services) by size of family.

To estimate utility expenses, the CLD uses data from the 2016–2017 Consumer Expenditure Survey (CEX).

Sources of Variation in Cost

We sum average household spending on natural gas, electricity, fuel oil and other fuels, and water and other public services among households in the CEX with income below $15,000 for differently sized families.[4]

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[4] See tables 3403, 3423, 3433, 3443,and 3453: "Size of consumer unit by income before taxes" available at https://www.bls.gov/cex/tables.htm#crosstab.

Using the Cost-of-Living Database: List of Inputs and Calculations

<u>List of Inputs</u>

The required family-level information for determining annual costs for the families modeled in the CLD are:

- Family size - **{famsize}**
- Inflation rate - **{inflation rate}**

<u>Calculations</u>

Step 1: Assign *annual* expenses to the family.
Merging data from the CLD by {stateName}, {countyortownName}, {numadults}, {numkids}

Step 2: Adjust for inflation.

exp.utilities=exp.utilities*(1+ {inflation rate})^(Current Year-[yearofdata])

2.4 Health Insurance Expenses

Costs of health insurance vary depending on the source. The CLD includes information on health insurance costs from three different sources:

- Employer-sponsored healthcare
- Health Insurance Marketplace (subsidized and unsubsidized)
- Medicaid/Children's Health Insurance (CHIP)

The CLD can be used with the PRD to determine the optimal health insurance bundle.

The algorithm for choosing the optimal health insurance bundle calculates health insurance premiums for individual and family plans if purchased through an employer or if purchased through the private market. Using government-assistance eligibility calculated using the PRD, the algorithm adjusts premiums for subsidies obtained through employer, Medicaid, CHIP, or Marketplace, and chooses the optimal bundle based on the lowest out-of-pocket premium. For example, the eligibility threshold for CHIP is frequently higher than that for Medicaid for adults; therefore, a household may choose to have the children enrolled in CHIP but may themselves purchase health insurance through the Marketplace or their employer, depending on which offers a lower premium.[5]

2.4.1 Employer-Sponsored Health Care

Overview

The CLD provides the monthly total expense of employer-sponsored health insurance by family size and state. The expense of insurance in the CLD includes both the portion paid by the employee and the portion paid by the employer. The portion paid by the employer can be calculated using the PRD. Families are assumed to purchase a single, plus-one, or family plan depending on the number of their family members.

The CLD can be used with the algorithm in the calculations section to calculate the annual total employer-sponsored health insurance costs of the family. The size of the family can be determined using the health insurance needs of each person in the family. See the health insurance cost minimization algorithm for details.

Sources of Variation in Cost

Families with one person are assumed to purchase a single plan, families with two people are assumed to purchase a plus-one plan, and families with three or more are assumed to purchase a family plan.

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[5] Households are ineligible for Marketplace subsidies if their employer-sponsored health insurance is "affordable."

Using the Cost-of-Living Database: List of Inputs and Calculations

<u>List of Inputs</u>

The required family-level information for determining annual costs for the families modeled in the CLD are:

- Family size - **{famsize}** .If not everyone is on the same plan, include only family members enrolled in employer-sponsored health insurance. For example, families can decide to enroll their children in Medicaid/CHIP.
- State identifiers: **{stateName}** - name of the state or **{stateFIPS}** - FIPS code of the state
- Inflation rate - **{inflation rate}**

<u>Calculations</u>

Step 1: Assign *monthly* expenses to the family.
Merging data from the CLD by {stateName}, {famsize}

Step 2: Annualize expenses.

expense.healthcare.employer=[expense.healthcare.employer]*12

Step 3: Adjust for inflation.

expense.healthcare.employer=expense.healthcare.employer(1+ {inflation rate})^(Current Year-[yearofdata])

2.4.2 Health Insurance Marketplace Costs

Overview

The CLD provides the monthly cost of health insurance purchased through the Health Insurance Marketplace by state and age of enrollee.

The CLD can be used with the algorithm in the calculations section to calculate the annual cost of health insurance purchased for all family members.

Sources of Variation in Cost

Since the 2014 Affordable Care Act (ACA) was passed, families have been able to purchase health insurance from the Marketplace. The CLD uses state-level data from the Kaiser Family

Foundation (KFF) on the average premium from the second-lowest-cost Silver plan (benchmark plan) for a 40-year-old.[6] Premiums are then adjusted for state-specific age curves using data from the Center for Medicaid and Medicare Services.[7]

Using the Cost-of-Living Database: List of Inputs and Calculations

List of Inputs

The required family-level information for determining annual costs for the families modeled in the CLD are:

- The age of each member of the household - **{age_1}**, **{age_2}**, **{age_3}**, **{age_4}**, **{age_5}**, **{age_5}**, **{age_6}**, **{age_7}**, **{age_8}**
- State identifiers: **{stateName}** - name of the state or **{stateFIPS}** - FIPS code of the state
- Inflation rate - **{inflation rate}**

Calculations

Step 1: Assign *monthly* expenses to the family.
Merging data from the CLD by {stateName}

Step 2: Determine costs of health insurance for each person in the family, up to 8 people.

For persons i=1:8 {
insurance_`i'=[Age.0-14] if age_`i' in (0,14)
insurance_`i'=[Age.15] if age_`i' ==15
insurance_`i'=[Age.16] if age_`i' ==16
insurance_`i'=[Age.17] if age_`i' ==17
insurance_`i'=[Age.18] if age_`i' ==18
insurance_`i'=[Age.19] if age_`i' ==19
insurance_`i'=[Age.20] if age_`i' ==20
insurance_`i'=[Age.21] if age_`i' ==21
insurance_`i'=[Age.22] if age_`i' ==22
insurance_`i'=[Age.23] if age_`i' ==23
insurance_`i'=[Age.24] if age_`i' ==24
insurance_`i'=[Age.25] if age_`i' ==25
insurance_`i'=[Age.26] if age_`i' ==26
insurance_`i'=[Age.27] if age_`i' ==27
insurance_`i'=[Age.28] if age_`i' ==28
insurance_`i'=[Age.29] if age_`i' ==29

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[6] https://www.kff.org/
[7] https://www.cms.gov/

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insurance_`i'=[Age.30] if age_`i' ==30
insurance_`i'=[Age.31] if age_`i' ==31
insurance_`i'=[Age.32] if age_`i' ==32
insurance_`i'=[Age.33] if age_`i' ==33
insurance_`i'=[Age.34] if age_`i' ==34
insurance_`i'=[Age.35] if age_`i' ==35
insurance_`i'=[Age.36] if age_`i' ==36
insurance_`i'=[Age.37] if age_`i' ==37
insurance_`i'=[Age.38] if age_`i' ==38
insurance_`i'=[Age.39] if age_`i' ==39
insurance_`i'=[Age.40] if age_`i' ==40
insurance_`i'=[Age.41] if age_`i' ==41
insurance_`i'=[Age.42] if age_`i' ==42
insurance_`i'=[Age.43] if age_`i' ==43
insurance_`i'=[Age.44] if age_`i' ==44
insurance_`i'=[Age.45] if age_`i' ==45
insurance_`i'=[Age.46] if age_`i' ==46
insurance_`i'=[Age.47] if age_`i' ==47
insurance_`i'=[Age.48] if age_`i' ==48
insurance_`i'=[Age.49] if age_`i' ==49
insurance_`i'=[Age.50] if age_`i' ==50
insurance_`i'=[Age.51] if age_`i' ==51
insurance_`i'=[Age.52] if age_`i' ==52
insurance_`i'=[Age.53] if age_`i' ==53
insurance_`i'=[Age.54] if age_`i' ==54
insurance_`i'=[Age.55] if age_`i' ==55
insurance_`i'=[Age.56] if age_`i' ==56
insurance_`i'=[Age.57] if age_`i' ==57
insurance_`i'=[Age.58] if age_`i' ==58
insurance_`i'=[Age.59] if age_`i' ==59
insurance_`i'=[Age.60] if age_`i' ==60
insurance_`i'=[Age.61] if age_`i' ==61
insurance_`i'=[Age.62] if age_`i' ==62
insurance_`i'=[Age.63] if age_`i' ==63
insurance_`i'=[Age.64+] if age_`i' >64

}
```

Step 3: Determine *annual* total costs to the family.

expense.insurance=12*(*insurance_1* + … + *,insurance_8)*

Step 4: Adjust for inflation.

expense.insurance=expense.insurance(1+ {inflation rate})^(Current Year-[yearofdata])

2.4.3 Medicaid

Overview

The CLD provides the annual cost of Medicaid by state for adults (19+) and children (0–19).

The CLD can be used with the algorithm in the calculations section to calculate the annual cost of health insurance purchased for all family members.

Sources of Variation in Cost

To approximate the total costs of Medicaid/CHIP, the CLD uses data from the Kaiser Family Foundation (KFF).[8] The KFF reports spending-per-enrollee figures representing the average (mean) level of payments across all Medicaid enrollees in the state who are receiving full Medicaid benefits.

Using the Cost-of-Living Database: List of Inputs and Calculations

List of Inputs

The required family-level information for determining annual costs for the families modeled in the CLD are:

- State identifiers: **{stateName}** - name of the state or **{stateFIPS}** - FIPS code of the state
- The age of each member of the household - **{age_1}**, **{age_2}**, **{age_3}**, **{age_4}**, **{age_5}**, **{age_5}**, **{age_6}**, **{age_7}**, **{age_8}**
- Inflation rate - **{inflation rate}**

Calculations

Step 1: Assign *annual* expenses to the family.
Merging data from the CLD by {stateName}

Step 2: Determine the annual costs of health insurance for each person in the family, up to 8 people.

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[8] https://www.kff.org

For persons i=1:8 {
*medicaid_ `i'*=[expense.medicaidChildren] if age_ `i' <=18
*medicaid_ `i'*=[expense.medicaidAdults] if age_ `i' >=19
}

Step 3: Determine the total costs to the family.

expense.medicaid=medicaid_1 + … + ,insurance_8

Step 4: Adjust for inflation.

expense.medicaid=expense.medicaid*(1+ {inflation rate})^(Current Year-[yearofdata])

2.4.4 Health Insurance Cost Minimization Algorithm

To estimate the total health insurance costs to a family, the CLD uses the Health Insurance Costs Minimization algorithm provided by the Policy Rules Database. There are three sources of health insurance available to families: employer-sponsored insurance, Medicaid/CHIP, and the Health Insurance Marketplace (subsidized and unsubsidized). The availability of employer-sponsored health insurance does not automatically make a family ineligible for public health care programs. A family still can receive Medicaid/CHIP as well as Marketplace subsidies if they pass an affordability test.

To use this algorithm, first apply calculations form the PRD to determine eligibility for each program then use the algorithm provided in the PRD that determines the source of health insurance for each family member. The PRD calculations assume that all families decide about the source of health insurance by minimizing the total out-of-pocket costs of health insurance. Algorithms are slightly different for families that have access to health insurance through employers and for those who do not. See the Health Insurance Costs Minimization Algorithm section of the Policy Rules Database for details.

2.5 Childcare Costs

Overview

The CLD contains the full-time daily cost of childcare for infants, toddlers, and school-age children. County-level data are provided for about half the states. The CLD additionally provides the estimated part-time-to-full-time cost ratio for computing the childcare cost on a part-time basis. It also specifies whether the state has a voluntary pre-K program that reaches at least 60 percent of the state's four-year-olds.

The CLD can be used with the algorithm in the calculations section to calculate the annual cost of childcare for all children in the family.

The algorithm provided assumes that when children are in school, they need part-time care and when they are on summer break or holiday, they need full-time care. The user can supply the number of days of each situation. The default value is 180 school days and 82 days of summer/holidays. Users can also specify part-time summer care instead of full-time summer care. By default, children are assumed to be school age if they are between 5 and 12 years old, unless they are in a voluntary pre-K state. Children in Florida, Oklahoma, Washington DC, Vermont, and Wisconsin are assumed to be school age starting at 4 years old.[9]

Sources of Variation in Cost

For about half the states, the CLD uses childcare expense data from the University of Washington Self-Sufficiency Standard (SSS).[10] The SSS assumes market-rate costs (defined as the 75th percentile) by facility type, age of children, and county. Most states conduct or commission market-rate surveys biannually for setting childcare assistance reimbursement rates. Where 2020 SSS data are unavailable, the CLD uses state-level data from Child Care Aware, which conducts a national market-rate survey and publishes the 75th percentile by state, facility type, and age of children.[11]

Using the Cost-of-Living Database: List of Inputs and Calculations

List of Inputs

The required family-level information for determining annual costs for the families modeled in the CLD are:

- State identifiers: **{stateName}** - name of the state or **{stateFIPS}** - FIPS code of the state

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[9] https://nces.ed.gov/programs/statereform/tab5_3.asp
[10] http://www.selfsufficiencystandard.org/methodology-self-sufficiency-standard
[11] https://www.childcareaware.org

- County identifier - **{countyortownName}**
- Age of child - **{ageofchild}**
- Assumption on whether school age children require full-time or part-time summer care - **{schoolagesummercare}**
- Number of summer childcare days - **{numberofSummerChildcareDays}**
- Number of school days - **{numberofSchoolDays}**
- Inflation rate - **{inflation rate}**

Calculations

Step 1: Assign the *full-time daily* costs to the family.
Merging data from the CLD by {stateName}, {countyortownName}

Step 2: Calculate *annual* childcare expenses based on the age of child and whether state offers free voluntary pre-K.

If 0<={ageofchild} <=2, then
exp.childcare=[ftdailyrate.infant]*({numberofSummerChildcareDays}+{numberofSchoolDays})

If {ageofchild} ==3 & {freePreKState}==1, then
exp.childcare=[ftdailyrate.toddler]*({numberofSummerChildcareDays}+{numberofSchoolDays})

If 3<={ageofchild}<=4 & {freePreKState}==0, then
exp.childcare=[ftdailyrate.toddler]*({numberofSummerChildcareDays}+{numberofSchoolDays})

If 4<={ageofchild}<=12 & {freePreKState}==1, then
exp.childcare=[ftdailyrate.schoolage]*({numberofSummerChildcareDays}*{careduringsummer}+{numberofSchoolDays}*[PTtoFTcostRatio])

If 5<={ageofchild}<=12 & {freePreKState}==0, then
exp.childcare=[ftdailyrate.schoolage]*({numberofSummerChildcareDays}*{careduringsummer}+{numberofSchoolDays}*[PTtoFTcostRatio])

Step 3: Adjust for inflation.

exp.childcare=exp.childcare*(1+ {inflation rate})^(Current Year-[yearofdata])

2.6 Transportation Costs

Overview

The CLD provides annual transportation costs by state, county, number of adults, and number of children.

Using the algorithm in the calculations section, you can use the CLD to calculate the annual cost of transportation for a household.

To generate the transportation cost data, we use data from the Housing and Transportation (H&T) Affordability Index and the Bureau of Labor Statistics' Consumer Expenditure Survey (CEX).

Sources of Variation in Cost

To generate the transportation cost data in the CLD, we use data from the Housing and Transportation (H&T) Affordability Index and the Consumer Expenditure Survey (CEX).

We begin by using the 2020 CEX Public Use Microdata from the U.S. Bureau of Labor Statistics. The CEX is a national survey that collects household-level data on a variety of household expenditures, including transportation expenses. The CEX also collects information on the age of the reference person, household income, family type, and number of earners in the household. We use the CEX data to determine how the average cost for total transportation expenses varies by households with different numbers of working adults with and without children among the sample of households with income below median household income for the state and where the reference person is between 25 and 54 years old. Using the CEX, we find that on average, across the United States, single adult working households in our sample spend $375 per month on transportation. Dual-income married adult households without children spend approximately 81 percent more than single adult households. Dual-income married adult households with one child spend approximately 22 percent more than dual-income married households without children. To estimate transportation expenses for households with up to three adults and four children, the CLD uses the cost per one adult plus 81 percent of the single-adult transportation for each additional adult and 22 percent of the single-adult transportation cost for each child in the family.

Last, we adjust the national transportation expense data obtained from the CEX using the H&T index. The H&T index provides information on how the cost of transportation varies by county across the United States, taking into account factors such as typical miles driven by individuals in the county and availability of public transportation. For example, transportation costs in New York County, New York, are about one-fourth that of Fulton County, Georgia. Using this county-level index we adjust the national data obtained from the CEX for this county-level variation.

Using Cost of Living Database: List of Inputs & Calculations

List of Inputs

The required family-level information for determining annual costs for the families modeled in the CLD are:

1. State identifiers: **{stateName}** - name of the state or **{stateFIPS}** - FIPS code of the state
2. County identifier - **{countyortownName}**
3. Number of adults - **{numadults}**
4. Number of children - **{numkids}**
5. Inflation rate - **{inflation rate}**

Calculations

Step 1: Assign _annual_ expenses to the family.
Merging data from the CLD by {stateName}, {countyortownName}, {numadults}, {numkids}

Step 2: Adjust for inflation.

exp.transportation=exp.transportation*(1+ {inflation rate})^(Current Year-[yearofdata])

2.7 Miscellaneous Costs

Overview

The CLD provides the annual cost of miscellaneous expenses according to state, county, number of adults, and number of children. This expense category is defined as all other essentials including clothing, shoes, paper products, diapers, nonprescription medicines, cleaning products, household items, personal hygiene items, and telephone service.

Sources of Variation in Costs

The CLD uses data from the University of Washington Self-Sufficiency Standard (SSS).[12] When SSS data are not available, CLD imputes data based on number of adults, number of kids, and local housing costs.

Using the Cost-of-Living Database: List of Inputs and Calculations

List of Inputs

The required family-level information for determining annual costs for the families modeled in the CLD are:

- State identifiers: **{stateName}** - name of the state or **{stateFIPS}** - FIPS code of the state
- County identifier - **{countyortownName}**
- Number of adults - **{numadults}**
- Number of children - **{numkids}**
- Inflation rate - **{inflation rate}**

Calculations

Step 1: Assign *annual* expenses to the family.
Merging data from the CLD by {stateName}, {countyortownName}, {numadults}, {numkids}

Step 2: Adjust for inflation.

exp.miscellaneous$\underline{=}$exp.miscellaneous*(1+ {inflation rate})^(Current Year-[yearofdata])

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[12]